UNIVERSITY AND EDUCATIONAL NEWS

An arrangement has recently been effected by means of which the University of Buffalo has acquired from Erie County, N. Y., one hundred and four acres of land to be used for university purposes. The tract is at the summit of the limestone ridge at the northern edge of the city, adjacent to the country club. The Medical Department of the University of Buffalo was founded in 1846 and three other professional schools have been organized since that time. The need for an academic department has long been felt and its organization now seems in a fair way to be accomplished. The land above mentioned will be devoted to that purpose.

Dr. William Edward Wilson, F.R.S., of Daramonahouse, county Westmeath, who died on March 6, leaving personalty valued at £50,121, bequeathed his philosophical and scientific instruments to Trinity College, Dublin, for use in the physical laboratory, and his telescope and its machinery to the Radcliffe Observatory at Oxford.

Mr. Charles Edwin Layton, of London, has made a large number of public bequests, including $30,000 to King's College, London, for scholarships to be awarded to those who show the best promise of genius and aptitude in original scientific work.

The trustees of the Massachusetts Agricultural College have recently established a new department of hygiene and physical culture. Percy L. Reynolds, M.D., has been placed in charge of the department. Dr. R. D. MacLaurin, research chemist at the experiment station, has been elected lecturer of organic chemistry in the college.

Dr. H. J. Davenport, assistant professor of economics in the University of Chicago, has been appointed professor of economics in the University of Missouri.

Dr. Harvey Carr, professor of psychology in the Pratt Institute, will succeed Dr. J. B. Watson (professor-elect in Johns Hopkins University) as assistant professor of psychology in the University of Chicago. Dr. Carr will have charge of the work in comparative psychology and will share in the conduct of the general experimental courses.

Dr. Clarence S. Yoakum, of the University of Chicago, has been appointed instructor in psychology at the University of Texas.

Dr. Victor E. Emmel, Austin teaching fellow in embryology and histology, Harvard Medical School, has accepted the appointment of instructor in histology and embryology in the Medical Department of Washington University, St. Louis, Mo.

At the Indiana University the following promotions have been made: From junior professor to professor, Wm. A. Rawles, Ph.D. (Columbia), economics and political science; S. C. Davisson, Sc.D. (Tübingen), and D. A. Rothrock, Ph.D. (Leipzig), mathematics; W. G. Moenkhaus, Ph.D. (Chicago), physiology; L. S. Davis, Ph.D. (Marburg), chemistry; A. G. Pohlman, M.D. (Buffalo Med. Col.), anatomy; W. R. Alburger, M.D. (Pennsylvania), pathology. W. A. Cogshall was promoted from assistant professor to associate professor of astronomy, and Dr. Charles Heseman from instructor to assistant professor of mathematics.

Dr. Wahrmund, professor of canon law at Innsbruck University, whose pamphlets criticizing Catholic dogmas led to a demand from the Papal Nuncio for his removal, and whose recent attempt to resume his lectures caused the closing of the university, has been transferred in a similar capacity to the German University at Prague.

Professor P. Schiefferdecker has been named the director of a new subdivision of the Anatomical Institute in Bonn.

At Cambridge Dr. Anderson has been appointed university lecturer in physiology; Mr. F. H. A. Marshall, M.A., Christ's, university lecturer in agricultural physiology; Mr. C. G. Lamb, M.A., Clare, university lecturer in electrical engineering, and Mr. C. E. Inglis, M.A., King's, university lecturer in mechanical engineering, all for five years.

Mr. H. J. Mackinder, M.A., who has resigned the office of director of the London

School of Economics and Political Science, to which he was appointed in 1903, retains the readership in geography, to which, under its then title, he was appointed in 1902.

DISCUSSION AND CORRESPONDENCE

MENDELIAN PROPORTIONS IN A MIXED POPULATION

TO THE EDITOR OF SCIENCE: I am reluctant to intrude in a discussion concerning matters of which I have no expert knowledge, and I should have expected the very simple point which I wish to make to have been familiar to biologists. However, some remarks of Mr. Udny Yule, to which Mr. R. C. Punnett has called my attention, suggest that it may still be worth making.

In the *Proceedings of the Royal Society of Medicine* (Vol. I., p. 165) Mr. Yule is reported to have suggested, as a criticism of the Mendelian position, that if brachydactyly is dominant "in the course of time one would expect, in the absence of counteracting factors, to get three brachydactylous persons to one normal."

It is not difficult to prove, however, that such an expectation would be quite groundless. Suppose that Aa is a pair of Mendelian characters, A being dominant, and that in any given generation the numbers of pure dominants (AA), heterozygotes (Aa), and pure recessives (aa) are as $p:2q:r$. Finally, suppose that the numbers are fairly large, so that the mating may be regarded as random, that the sexes are evenly distributed among the three varieties, and that all are equally fertile. A little mathematics of the multiplication-table type is enough to show that in the next generation the numbers will be as

$$(p+q)^2 : 2(p+q)(q+r) : (q+r)^2,$$

or as $p_1 : 2q_1 : r_1$, say.

The interesting question is—in what circumstances will this distribution be the same as that in the generation before? It is easy to see that the condition for this is $q^2 = pr$. And since $q_1^2 = p_1 r_1$, whatever the values of p, q and r may be, the distribution will in any case continue unchanged after the second generation.

Suppose, to take a definite instance, that A is brachydactyly, and that we start from a population of pure brachydactylous and pure normal persons, say in the ratio of 1:10,000. Then $p=1$, $q=0$, $r=10{,}000$ and $p_1=1$, $q_1=10{,}000$, $r_1=100{,}000{,}000$. If brachydactyly is dominant, the proportion of brachydactylous persons in the second generation is 20,001:100,020,001, or practically 2:10,000, twice that in the first generation; and this proportion will afterwards have no tendency whatever to increase. If, on the other hand, brachydactyly were recessive, the proportion in the second generation would be 1:100,020,001, or practically 1:100,000,000, and this proportion would afterwards have no tendency to decrease.

In a word, there is not the slightest foundation for the idea that a dominant character should show a tendency to spread over a whole population, or that a recessive should tend to die out.

I ought perhaps to add a few words on the effect of the small deviations from the theoretical proportions which will, of course, occur in every generation. Such a distribution as $p_1 : 2q_1 : r_1$, which satisfies the condition $q_1^2 = p_1 r_1$, we may call a *stable* distribution. In actual fact we shall obtain in the second generation not $p_1 : 2q_1 : r_1$ but a slightly different distribution $p_1' : 2q_1' : r_1'$, which is not "stable." This should, according to theory, give us in the third generation a "stable" distribution $p_2 : 2q_2 : r_2$, also differing slightly from $p_1 : 2q_1 : r_1$; and so on. The sense in which the distribution $p_1 : 2q_1 : r_1$ is "stable" is this, that if we allow for the effect of casual deviations in any subsequent generation, we should, according to theory, obtain at the next generation a new "stable" distribution differing but slightly from the original distribution.

I have, of course, considered only the very simplest hypotheses possible. Hypotheses other that that of purely random mating will give different results, and, of course, if, as appears to be the case sometimes, the character is not independent of that of sex, or